

Application No. 10/602819
Amendment dated 18 January 2005
Reply to Office Action of 20 October 2004

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REMARKS

The Applicant has amended the specification to clarify the title and to remove extraneous text.

The Applicant has amended the claims by: cancelling claims 3, 4, 7 and 8; amending claims 1, 2, 5, 6, 9 and 10; and adding new claims 15-46. Claims 1, 2, 5, 6, 9, 10 and 11-46 are pending after this amendment.

Allowable subject matter

The Examiner has indicated that claims 5, 6 and 11-14 are allowable.

The Applicant has amended claims 5 and 6 for clarity only. The Applicant respectfully submits that amended claims 5 and 6 recite features which patentably distinguish the prior art of record. More specifically, claim 5 recites "emitting the fluid droplets from the plurality of groups of nozzles into a plurality of regions of the flow of air, the plurality of regions each having a regional airflow velocity lower than a maximum airflow velocity of the flow of air and the plurality of regions each having a different regional airflow velocity." The Examiner has previously indicated that this feature of claim 5 patentably distinguishes the prior art. Accordingly, the Applicant submits that claim 5 is in condition for allowance. Claim 6 depends from claim 5 and is submitted to be allowable for at least this reason.

Claims 1, 2 and 16-32

The Office Action cites US Patent No. 3,972,051 (Lundquist et al.) in connection with the patentability of claim 1. The Applicant respectfully submits that claim 1 patentably distinguishes Lundquist et al.

As understood by the Applicant, Lundquist et al. discloses a passageway through which ink droplets are directed before striking a moving print medium. A portion of the passageway closest to the print medium is contoured to expand toward the print medium for slowing a column of air passing therethrough before the column reaches the print medium. Air suction apertures located in the expanded portion of the passageway and near the print

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medium provide withdrawal of the airflow to prevent buildup at the print medium interface and to maintain laminarity as the air slows down.

Lundquist et al. fails to disclose the combination of "establishing a flow of air in a first direction" and "emitting at least one fluid droplet from each of the droplet emitters into a first region of the flow of air which is spaced apart from a location of the maximum airflow velocity in a direction transverse to the first direction, the first region having a first regional airflow velocity lower than the maximum airflow velocity" as recited in claim 1. In col. 4, ln. 34 to col. 5, ln. 2, Lundquist et al. describe slowing down the airflow velocity of a laminar flow of air by expanding a cross-sectional dimension of a passageway. However, neither this passage nor any other part of Lundquist et al. discloses or suggests emitting the fluid droplets into a region of the flow of air which is spaced apart from a location of the maximum airflow velocity in a direction transverse to the direction of the flow of air and which has a regional airflow velocity that is less than the maximum airflow velocity of the flow of air.

Based on this reasoning, the Applicant submits that claim 1 patentably distinguishes Lundquist et al. Claims 2 and 16-32 depend from claim 1 and are submitted to be allowable for at least this reason.

Claims 9, 10 and 33-47

The Office Action cites Lundquist et al. in combination with US Patent No. 4,297,712 (Lammers et al.) in relation to claim 9. The Applicant respectfully submits that claim 9 patentably distinguishes the combination of Lundquist et al. and Lammers et al.

Claim 9 recites the combination of "means for establishing in the airflow duct a collinear airflow in a first direction, the collinear airflow comprising: (a) an airflow velocity profile with a maximum airflow velocity; and (b) a first region transversely spaced apart from a location of the maximum regional airflow velocity in a direction transverse to the first direction, wherein the collinear airflow has a first regional airflow velocity in the first region, which is lower than the maximum airflow velocity; and at least one nozzle disposed to emit fluid droplets into the first region in the first direction." Lundquist et al. fails to teach or disclose this combination of features. As discussed above, Lundquist et al. describes introducing fluid droplets into an airflow located in a passageway and then slowing down the velocity of the airflow by expanding a cross-sectional dimension of the passageway. However, Lundquist et al. does not teach or suggest a nozzle disposed to emit fluid droplets

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into a region which is spaced apart from a location of the maximum regional airflow velocity in a direction transverse to the direction of air flow and which has a regional airflow velocity less than the maximum airflow velocity.

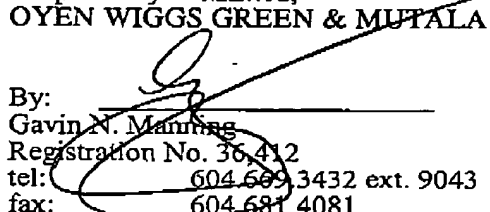
Lammers et al. fails to remedy this deficiency of Lundquist et al.. As understood by the Applicant, Lammers et al. describes a droplet aspirator suitable for use with a multinozzle inkjet printer. The droplet aspirator has a flow channel which includes: an exit section with a constant cross-sectional area extending from a point where the ink droplets are ejected into the channel to a point where the droplets exit the channel; an entry section having a relatively large cross-sectional area; and an intermediate section with reduced cross-sectional area interconnecting the entry section with the exit section. Lammers et al. fails to teach or suggest a nozzle disposed to emit fluid droplets into a region which is spaced apart from a location of the maximum regional airflow velocity in a direction transverse to the direction of air flow and which has a regional airflow velocity less than the maximum airflow velocity. In contrast, Lammers et al. teaches away from this feature of claim 9 at column 6, lines 6-8, where it refers to the exit section of its channel and states "with the planar cross-sectional area, the velocity profile is uniform throughout the tunnel."

Based on this reasoning, the Applicant respectfully submits that claim 9 patentably distinguishes the combination of Lundquist et al. and Lammers et al. Claims 10 and 33-47 depend from claim 9 and are submitted to be allowable for at least this reason.

Conclusions

In view of the amendments and arguments presented above, the Applicant submits that this application is in condition for allowance and respectfully requests reconsideration and allowance of this application.

Respectfully submitted,
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